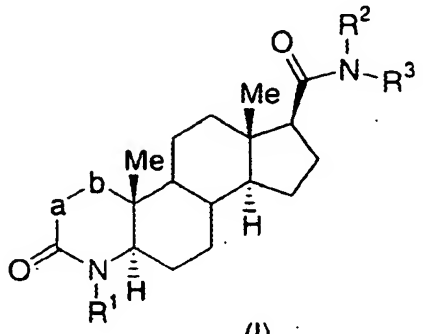
WHAT IS CLAIMED IS:

1. A compound of structural formula I:



(I)

or a pharmaceutically acceptable salt or an enantiomer thereof; wherein

n is 0, 1 or 2;

a-b represents CF=CH, $CHFCH_2$, or CF_2CH_2;

R^1 is hydrogen, hydroxymethyl, or C_{1-3} alkyl, wherein alkyl is unsubstituted or substituted with one to seven fluorine atoms;

R^2 is hydrogen or C_{1-4} alkyl;

R^3 is selected from

C_{1-4} alkyl,

$(CH_2)_n$-cycloheteroalkyl, and

$(CH_2)_n$-aryl, wherein aryl is selected from

(1) phenyl,

(2) naphthyl,

(3) benzimidazolyl,

(4) benzofuranyl,

(5) benzothiophenyl,

(6) benzoxazolyl,

(7) benzothiazolyl,

(8) benzodihydrofuranyl,

(9) 1,3-benzodioxolyl,

(10) 2,3-dihydro-1,4-benzodioxinyl,

(11) indolyl,

(12) quinolyl,

(13) isoquinolyl,
(14) furanyl,
(15) thienyl,
(16) imidazolyl,
(17) oxazolyl,
(18) thiazolyl,
(19) isoxazolyl,
(20) isothiazolyl,
(21) pyrazolyl,
(22) pyrrolyl,
(23) pyridyl,
(24) pyrimidyl,
(25) pyrazinyl,
(26) thiadiazolyl,
(27) oxadiazolyl,
(28) triazolyl,
(29) tetrazolyl, and
(30) indanyl;

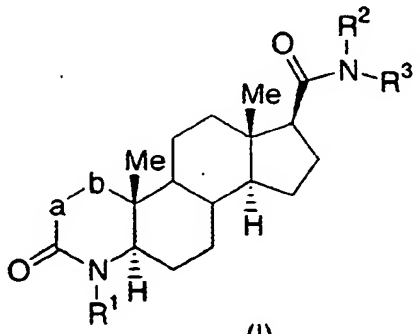
wherein the alkyl group or the cycloheteroalkyl group is unsubstituted or substituted with one to three substituents independently selected from halogen, hydroxy, and C_{1-4} alkoxy; the aryl group as defined in items (1) to (30) is unsubstituted or substituted with one to three groups independently selected from halogen, phenyl, C_{1-8} alkyl, C_{3-8} cycloalkyl, C_{3-8} cycloheteroalkyl, phenyl-C_{1-6} alkyl, amino-C_{0-6} alkyl, C_{1-6} alkylamino-C_{0-6} alkyl, (C_{1-6} alkyl)$_2$amino-C_{0-6} alkyl, phenyl-C_{0-6} alkylamino-C_{0-6} alkyl, (phenyl-C_{0-6} alkyl)$_2$amino-C_{0-6} alkyl, C_{1-6} alkylthio, phenyl-C_{0-6} alkylthio, C_{1-6} alkylsulfinyl, phenyl-C_{0-6} alkylsulfinyl, C_{1-6} alkylsulfonyl, phenyl-C_{0-6} alkylsulfonyl,
C_{1-6} alkoxy-C_{0-6} alkyl, phenyl-C_{0-6} alkoxy-C_{0-6} alkyl, hydroxycarbonyl-C_{0-6} alkyl, C_{1-6} alkoxycarbonyl-C_{0-6} alkyl, phenyl-C_{0-6} alkoxycarbonyl-C_{0-6} alkyl, hydroxycarbonyl-C_{1-6} alkyloxy, hydroxy-C_{0-6} alkyl, cyano, nitro, perfluoro-C_{1-4} alkyl, perfluoro-C_{1-4} alkoxy, oxo, C_{1-6} alkylcarbonyloxy, phenyl-C_{0-6} alkylcarbonyloxy, C_{1-6} alkylcarbonylamino, phenyl-C_{0-6} alkylcarbonylamino, C_{1-6} alkylsulfonylamino, phenyl-C_{0-6} alkylsulfonylamino, C_{1-6} alkoxycarbonylamino, phenyl-C_{0-6} alkoxycarbonylamino, C_{1-6} alkylaminocarbonylamino, phenyl-C_{0-6} alkylaminocarbonylamino, (C_{1-6} alkyl)$_2$ aminocarbonylamino, (phenyl-C_{0-6} alkyl)$_2$

aminocarbonylamino, $(C_{1-6}$ alkyl$)_2$ aminocarbonyloxy, and (phenyl-C_{0-6} alkyl$)_2$ aminocarbonyloxy; and wherein any methylene (CH_2) carbon atom in $(CH_2)_n$ is unsubstituted or substituted with one to two groups independently selected from halogen, hydroxy, and C_{1-4} alkyl; or two substituents when on the same methylene (CH_2) group are taken together with the carbon atom to which they are attached to form a cyclopropyl group;

or R^2 and R^3 together form a 5- or 6-membered saturated ring fused with a 5- or 6-membered aromatic ring system having 0, 1, or 2 heteroatoms selected from the N, O, and S.

2. The compound of Claim 1 wherein R^1 is hydrogen or methyl.

3. A compound of structural formula I:



(I)

or a pharmaceutically acceptable salt or an enantiomer thereof; wherein

n is 0, 1 or 2;

a-b represents CF=CH, $CHFCH_2$, or CF_2CH_2;

R^1 is hydrogen, hydroxymethyl, or C_{1-3} alkyl, wherein alkyl is unsubstituted or substituted with one to seven fluorine atoms;

R^2 is hydrogen or C_{1-4} alkyl;

R^3 is selected from

C_{1-4} alkyl, and

$(CH_2)_n$-aryl, wherein aryl is selected from

(1) phenyl,

(2) naphthyl,

(3) benzimidazolyl,

(4) benzofuranyl,
(5) benzothiophenyl,
(6) benzoxazolyl,
(7) benzothiazolyl,
(8) benzodihydrofuranyl,
(9) 1,3-benzodioxolyl,
(10) 2,3-dihydro-1,4-benzodioxinyl,
(11) indolyl,
(12) quinolyl,
(13) isoquinolyl,
(14) furanyl,
(15) thienyl,
(16) imidazolyl,
(17) oxazolyl,
(18) thiazolyl,
(19) isoxazolyl,
(20) isothiazolyl,
(21) pyrazolyl,
(22) pyrrolyl,
(23) pyridyl,
(24) pyrimidyl,
(25) pyrazinyl,
(26) thiadiazolyl,
(27) oxadiazolyl,
(28) triazolyl,
(29) tetrazolyl, and
(30) indanyl;

wherein the alkyl group or the cycloheteroalkyl group is unsubstituted or substituted with one to three substituents independently selected from halogen, hydroxy, and C_{1-4} alkoxy; the aryl group as defined in items (1) to (30) is unsubstituted or substituted with one to three groups independently selected from halogen, phenyl, C_{1-8} alkyl, C_{3-8} cycloalkyl, C_{3-8} cycloheteroalkyl, phenyl-C_{1-6} alkyl, amino-C_{0-6} alkyl, C_{1-6} alkylamino-C_{0-6} alkyl, (C_{1-6} alkyl)$_2$amino-C_{0-6} alkyl, phenyl-C_{0-6} alkylamino-C_{0-6} alkyl, (phenyl-C_{0-6} alkyl)$_2$amino-C_{0-6} alkyl, C_{1-6} alkylthio, phenyl-C_{0-6} alkylthio,

C_{1-6} alkylsulfinyl, phenyl-C_{0-6} alkylsulfinyl, C_{1-6} alkylsulfonyl, phenyl-C_{0-6} alkylsulfonyl,
C_{1-6} alkoxy-C_{0-6} alkyl, phenyl-C_{0-6} alkoxy-C_{0-6} alkyl, hydroxycarbonyl-C_{0-6} alkyl, C_{1-6} alkoxycarbonyl-C_{0-6} alkyl, phenyl-C_{0-6} alkoxycarbonyl-C_{0-6} alkyl, hydroxycarbonyl-C_{1-6} alkyloxy, hydroxy-C_{0-6} alkyl, cyano, nitro, perfluoro-C_{1-4} alkyl, perfluoro-C_{1-4} alkoxy, oxo, C_{1-6} alkylcarbonyloxy, phenyl-C_{0-6} alkylcarbonyloxy, C_{1-6} alkylcarbonylamino, phenyl-C_{0-6} alkylcarbonylamino, C_{1-6} alkylsulfonylamino, phenyl-C_{0-6} alkylsulfonylamino, C_{1-6} alkoxycarbonylamino, phenyl-C_{0-6} alkoxycarbonylamino, C_{1-6} alkylaminocarbonylamino, phenyl-C_{0-6} alkylaminocarbonylamino, $(C_{1-6}$ alkyl$)_2$ aminocarbonylamino, (phenyl-C_{0-6} alkyl$)_2$ aminocarbonylamino, $(C_{1-6}$ alkyl$)_2$ aminocarbonyloxy, and (phenyl-C_{0-6} alkyl$)_2$ aminocarbonyloxy; and wherein any methylene (CH_2) carbon atom in $(CH_2)_n$ is unsubstituted or substituted with one to two groups independently selected from halogen, hydroxy, and C_{1-4} alkyl; or two substituents when on the same methylene (CH_2) group are taken together with the carbon atom to which they are attached to form a cyclopropyl group;
or R^2 and R^3 together form a 5- or 6-membered saturated ring fused with a 5- or 6-membered aromatic ring system having 0, 1, or 2 heteroatoms selected from the N, O, and S.

4. The compound of Claim 3, wherein R^1 is hydrogen or methyl.

5. The compound of Claim 1 wherein a-b represents CF=CH.

6. The compound of Claim 1 wherein a-b represents $CHFCH_2$.

7. The compound of Claim 1 wherein R^2 is hydrogen and R^3 is $(CH_2)_n$-aryl.

8. The compound of Claim 7 wherein n is 0 or 1.

9. The compound of Claim 1 wherein R^1 is methyl, a-b represents CF=CH, R^2 is hydrogen, and R^3 is $(CH_2)_n$-aryl.

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10. The compound of Claim 9 wherein n is 0 or 1.

11. The compound of Claim 1 wherein R^1 is methyl, a-b represents $CHFCH_2$, R^2 is hydrogen, and R^3 is $(CH_2)_n$-aryl.12. The compound of Claim 11 wherein n is 0 or 1.

12. ~~13.~~ The compound of Claim 1 wherein R^1 is methyl, a-b represents CF=CH, R^2 is hydrogen, and R^3 is $(CH_2)_n$-cycloheteroalkyl.

13. ~~14.~~ The compound of Claim 13, wherein n is 0 or 1.

14. ~~15.~~ The compound of Claim 1 wherein R^1 is methyl, a-b represents $CHFCH_2$, R^2 is hydrogen, and R^3 is $(CH_2)_n$-cycloheteroalkyl.

15. ~~16.~~ The compound of Claim 15, wherein n is 0 or 1.

16. ~~17.~~ The compound of Claim 2 chosen from:

N-(2,2,2-trifluoroethyl)-2-fluoro-4-methyl-3-oxo-4-aza-5α-androst-1-en-17β-carboxamide;

N-(2-fluorophenylmethyl)-2-fluoro-4-methyl-3-oxo-4-aza-5α-androst-1-en-17β-carboxamide;

N-(3-fluorophenylmethyl)-2-fluoro-4-methyl-3-oxo-4-aza-5α-androst-1-en-17β-carboxamide;

N-(2-trifluoromethylphenyl)-2-fluoro-4-methyl-3-oxo-4-aza-5α-androst-1-en-17β-carboxamide;

N-(2-chlorophenyl)-2-fluoro-4-methyl-3-oxo-4-aza-5α-androst-1-en-17β-carboxamide;

N-(4-methoxyphenyl)-2-fluoro-4-methyl-3-oxo-4-aza-5α-androst-1-en-17β-carboxamide;

N-(3-methoxyphenyl)-2-fluoro-4-methyl-3-oxo-4-aza-5α-androst-1-en-17β-carboxamide;

N-(2-methylphenyl)-2-fluoro-4-methyl-3-oxo-4-aza-5α-androst-1-en-17β-carboxamide;

N-(3-methylphenyl)-2-fluoro-4-methyl-3-oxo-4-aza-5α-androst-1-en-17β-carboxamide;

N-(2-fluorophenyl)-2-fluoro-4-methyl-3-oxo-4-aza-5α-androst-1-en-17β-carboxamide;

N-(3-fluorophenyl)-2-fluoro-4-methyl-3-oxo-4-aza-5α-androst-1-en-17β-carboxamide;

N-(4-fluorophenyl)-2-fluoro-4-methyl-3-oxo-4-aza-5α-androst-1-en-17β-carboxamide;

N-(4-chloro-2-fluorophenyl)-2-fluoro-4-methyl-3-oxo-4-aza-5α-androst-1-en-17β-carboxamide;

N-(2,4-difluorophenyl)-2-fluoro-4-methyl-3-oxo-4-aza-5α-androst-1-en-17β-carboxamide;

N-(α-methylphenylmethyl)-2-fluoro-4-methyl-3-oxo-4-aza-5α-androst-1-en-17β-carboxamide;

N-(phenyl)-2-fluoro-4-methyl-3-oxo-4-aza-5α-androst-1-en-17β-carboxamide;

N-(4-chloro-2-trifluoromethylphenyl)-2-fluoro-4-methyl-3-oxo-4-aza-5α-androst-1-en-17β-carboxamide;

N-(5-methylpyridin-2-yl)-2-fluoro-4-methyl-3-oxo-4-aza-5α-androst-1-en-17β-carboxamide;

N-(thiophen-2-ylmethyl)-2-fluoro-4-methyl-3-oxo-4-aza-5α-androst-1-en-17β-carboxamide;

N-(thiophen-3-ylmethyl)-2-fluoro-4-methyl-3-oxo-4-aza-5α-androst-1-en-17β-carboxamide;

N-(2-trifluoromethylphenylmethyl)-2-fluoro-4-methyl-3-oxo-4-aza-5α-androst-1-en-17β-carboxamide;

N-(benzimidazol-2-ylmethyl)-2-fluoro-4-methyl-3-oxo-4-aza-5α-androst-1-en-17β-carboxamide;

N-(1-methylbenzimidazol-2-ylmethyl)-2-fluoro-4-methyl-3-oxo-4-aza-5α-androst-1-en-17β-carboxamide;

N-(1-methyl-5-trifluoromethylbenzimidazol-2-ylmethyl)-2-fluoro-4-methyl-3-oxo-4-aza-5α-androst-1-en-17β-carboxamide;

N-(5-chlorobenzimidazol-2-ylmethyl)-2-fluoro-4-methyl-3-oxo-4-aza-5α-androst-1-en-17β-carboxamide;

N-(5-methoxybenzimidazol-2-ylmethyl)-2-fluoro-4-methyl-3-oxo-4-aza-5α-androst-1-en-17β-carboxamide;

N-(benzthiazol-2-ylmethyl)-2-fluoro-4-methyl-3-oxo-4-aza-5α-androst-1-en-17β-carboxamide;

N-(2,3-dihydro-1,4-benzodioxin-2-ylmethyl)-2-fluoro-4-methyl-3-oxo-4-aza-5α-androst-1-en-17β-carboxamide;

N-(thiazol-2-ylmethyl)-2-fluoro-4-methyl-3-oxo-4-aza-5α-androst-1-en-17β-carboxamide;

N-(4-methylthiazol-2-ylmethyl)-2-fluoro-4-methyl-3-oxo-4-aza-5α-androst-1-en-17β-carboxamide;

N-(thiazol-4-ylmethyl)-2-fluoro-4-methyl-3-oxo-4-aza-5α-androst-1-en-17β-carboxamide;

N-(1-methylimidazol-2-ylmethyl)-2-fluoro-4-methyl-3-oxo-4-aza-5α-androst-1-en-17β-carboxamide;

N-(tetrahydro-2*H*-pyran-2(S)-ylmethyl)-2-fluoro-4-methyl-3-oxo-4-aza-5α-androst-1-en-17β-carboxamide;

N-(tetrahydro-2*H*-pyran-2(R)-ylmethyl)-2-fluoro-4-methyl-3-oxo-4-aza-5α-androst-1-en-17β-carboxamide;

N-(2,3-dihydro-1,4-benzodioxin-2(R)-ylmethyl)-2-fluoro-4-methyl-3-oxo-4-aza-5α-androst-1-en-17β-carboxamide;

N-(2,3-dihydro-1,4-benzodioxin-2(S)-ylmethyl)-2-fluoro-4-methyl-3-oxo-4-aza-5α-androst-1-en-17β-carboxamide;

N-(tetrahydrofuran-2(S)-ylmethyl)-2-fluoro-4-methyl-3-oxo-4-aza-5α-androst-1-en-17β-carboxamide;

N-(tetrahydrofuran-2(R)-ylmethyl)-2-fluoro-4-methyl-3-oxo-4-aza-5α-androst-1-en-17β-carboxamide;

N-(3*H*-imidazo[4,5-*b*]pyridin-2-ylmethyl)-2-fluoro-4-methyl-3-oxo-4-aza-5α-androst-1-en-17β-carboxamide;

N-(2-fluorophenylmethyl)-2α-fluoro-4-methyl-3-oxo-4-aza-5α-androstan-17β-carboxamide;

N-(2-trifluoromethylphenylmethyl)-2α-fluoro-4-methyl-3-oxo-4-aza-5α-androstan-17β-carboxamide;

N-(3-methoxyphenyl)-2α-fluoro-4-methyl-3-oxo-4-aza-5α-androstan-17β-carboxamide;

N-(4-methoxyphenyl)-2α-fluoro-4-methyl-3-oxo-4-aza-5α-androstan-17β-carboxamide;

N-(2-trifluoromethylphenyl)-2α-fluoro-4-methyl-3-oxo-4-aza-5α-androstan-17β-carboxamide;

N-(2-chlorophenyl)-2α-fluoro-4-methyl-3-oxo-4-aza-5α-androstan-17β-carboxamide;

N-(2-fluorophenylmethyl)-2α-fluoro-4-methyl-3-oxo-4-aza-5α-androstan-17β-carboxamide;

N-(benzimidazol-2-ylmethyl)-2α-fluoro-4-methyl-3-oxo-4-aza-5α-androstan-17β-carboxamide;

N-(1-methylbenzimidazol-2-ylmethyl)-2α-fluoro-4-methyl-3-oxo-4-aza-5α-androstan-17β-carboxamide;

N-(thiazol-2-ylmethyl)-2α-fluoro-4-methyl-3-oxo-4-aza-5α-androstan-17β-carboxamide;

N-(furan-2-ylmethyl)-2α-fluoro-4-methyl-3-oxo-4-aza-5α-androstan-17β-carboxamide; and

N-(thiophen-2-ylmethyl)-2α-fluoro-4-methyl-3-oxo-4-aza-5α-androstan-17β-carboxamide;

pharmaceutically acceptable salts and enantiomers thereof.

17. 18. The compound of Claim 17 chosen from:

N-(2-fluorophenylmethyl)-2-fluoro-4-methyl-3-oxo-4-aza-5α-androst-1-en-17β-carboxamide;

N-(3-fluorophenylmethyl)-2-fluoro-4-methyl-3-oxo-4-aza-5α-androst-1-en-17β-carboxamide;

N-(5-chlorobenzimidazol-2-ylmethyl)-2-fluoro-4-methyl-3-oxo-4-aza-5α-androst-1-en-17β-carboxamide;

N-(5-methoxybenzimidazol-2-ylmethyl)-2-fluoro-4-methyl-3-oxo-4-aza-5α-androst-1-en-17β-carboxamide;

N-(benzthiazol-2-ylmethyl)-2-fluoro-4-methyl-3-oxo-4-aza-5α-androst-1-en-17β-carboxamide;

N-(tetrahydro-2*H*-pyran-2(S)-ylmethyl)-2-fluoro-4-methyl-3-oxo-4-aza-5α-androst-1-en-17β-carboxamide;

N-(tetrahydro-2*H*-pyran-2(R)-ylmethyl)-2-fluoro-4-methyl-3-oxo-4-aza-5α-androst-1-en-17β-carboxamide;

N-(2,3-dihydro-1,4-benzodioxin-2(R)-ylmethyl)-2-fluoro-4-methyl-3-oxo-4-aza-5α-androst-1-en-17β-carboxamide;

N-(2,3-dihydro-1,4-benzodioxin-2(S)-ylmethyl)-2-fluoro-4-methyl-3-oxo-4-aza-5α-androst-1-en-17β-carboxamide;

N-(tetrahydrofuran-2(S)-ylmethyl)-2-fluoro-4-methyl-3-oxo-4-aza-5α-androst-1-en-17β-carboxamide;

N-(tetrahydrofuran-2(R)-ylmethyl)-2-fluoro-4-methyl-3-oxo-4-aza-5α-androst-1-en-17β-carboxamide;

N-(3*H*-imidazo[4,5-*b*]pyridin-2-ylmethyl)-2-fluoro-4-methyl-3-oxo-4-aza-5α-androst-1-en-17β-carboxamide;

N-(2-fluorophenylmethyl)-2α-fluoro-4-methyl-3-oxo-4-aza-5α-androstan-17β-carboxamide;

N-(thiazol-2-ylmethyl)-2α-fluoro-4-methyl-3-oxo-4-aza-5α-androstan-17β-carboxamide;

N-(furan-2-ylmethyl)-2α-fluoro-4-methyl-3-oxo-4-aza-5α-androstan-17β-carboxamide; and

N-(thiophen-2-ylmethyl)-2α-fluoro-4-methyl-3-oxo-4-aza-5α-androstan-17β-carboxamide;

pharmaceutically acceptable salts and enantiomers thereof.

18.

~~19~~. The compound of Claim 18 chosen from:

N-(tetrahydro-2*H*-pyran-2(S)-ylmethyl)-2-fluoro-4-methyl-3-oxo-4-aza-5α-androst-1-en-17β-carboxamide;

N-(tetrahydro-2*H*-pyran-2(R)-ylmethyl)-2-fluoro-4-methyl-3-oxo-4-aza-5α-androst-1-en-17β-carboxamide;

N-(2,3-dihydro-1,4-benzodioxin-2(R)-ylmethyl)-2-fluoro-4-methyl-3-oxo-4-aza-5α-androst-1-en-17β-carboxamide;

N-(2,3-dihydro-1,4-benzodioxin-2(S)-ylmethyl)-2-fluoro-4-methyl-3-oxo-4-aza-5α-androst-1-en-17β-carboxamide;

N-(tetrahydrofuran-2(S)-ylmethyl)-2-fluoro-4-methyl-3-oxo-4-aza-5α-androst-1-en-17β-carboxamide;

N-(tetrahydrofuran-2(R)-ylmethyl)-2-fluoro-4-methyl-3-oxo-4-aza-5α-androst-1-en-17β-carboxamide;

N-(3*H*-imidazo[4,5-*b*]pyridin-2-ylmethyl)-2-fluoro-4-methyl-3-oxo-4-aza-5α-androst-1-en-17β-carboxamide;

pharmaceutically acceptable salts and enantiomers thereof.

19.

~~20~~. The compound of Claim 18 chosen from:

N-(2-fluorophenylmethyl)-2-fluoro-4-methyl-3-oxo-4-aza-5α-androst-1-en-17β-carboxamide;

N-(3-fluorophenylmethyl)-2-fluoro-4-methyl-3-oxo-4-aza-5α-androst-1-en-17β-carboxamide;

N-(5-chlorobenzimidazol-2-ylmethyl)-2-fluoro-4-methyl-3-oxo-4-aza-5α-androst-1-en-17β-carboxamide;

N-(5-methoxybenzimidazol-2-ylmethyl)-2-fluoro-4-methyl-3-oxo-4-aza-5α-androst-1-en-17β-carboxamide;

N-(benzthiazol-2-ylmethyl)-2-fluoro-4-methyl-3-oxo-4-aza-5α-androst-1-en-17β-carboxamide;

N-(2-fluorophenylmethyl)-2α-fluoro-4-methyl-3-oxo-4-aza-5α-androstan-17β-carboxamide;

N-(thiazol-2-ylmethyl)-2α-fluoro-4-methyl-3-oxo-4-aza-5α-androstan-17β-carboxamide;

N-(furan-2-ylmethyl)-2α-fluoro-4-methyl-3-oxo-4-aza-5α-androstan-17β-carboxamide; and

N-(thiophen-2-ylmethyl)-2α-fluoro-4-methyl-3-oxo-4-aza-5α-androstan-17β-carboxamide;

pharmaceutically acceptable salts and enantiomers thereof.

20.

21. A method for modulating a function mediated by the androgen receptor in a mammal in need of such modulation comprising administering a therapeutically effective amount of a compound of Claim 1 or a pharmaceutically acceptable salt or an enantiomer thereof.

21.

22. A method of activating the function of the androgen receptor in a mammal in need of such activation comprising administering a therapeutically effective amount of a compound of Claim 1 or a pharmaceutically acceptable salt or an enantiomer thereof.

22.

23. The method of Claim 21 wherein said function mediated by the androgen receptor is activated in at least one of bone andmuscle tissue and blocked in the prostate or the uterus.

23.

24. A method of treating a condition in a mammal which is caused by androgen deficiency or which can be ameliorated by androgen replacement, or which can be increased by androgen replacement, which condition is selected from weakened muscle tone, osteoporosis, osteopenia, glucocorticoid-induced osteoporosis, periodontal disease, bone fracture, bone damage following bone reconstructive surgery, sarcopenia, frailty, aging skin, male hypogonadism, postmenopausal symptoms in women, atherosclerosis, hypercholesterolemia, hyperlipidemia, obesity, aplastic anemia and other hematopoietic disorders, arthritic conditions, HIV-wasting, prostate cancer, cancer cachexia, muscular dystrophies, premature ovarian failure, and autoimmune disease, comprising administering to the mammal in need of such treatment, a therapeutically effective amount of a compound of formula I or a pharmaceutically acceptable salt or an enantiomer thereof.

24.

25. The method according to Claim 24 wherein said condition is osteoporosis.

25.

26. A method of treating osteoporosis in a mammal in need thereof, comprising administering a therapeutically effective amount of a compound according to Claim 11 or a pharmaceutically acceptable salt or an enantiomer thereof.

26.

27. The method of Claim 26 further comprising the administration of an agent selected from :

(a) an estrogen or an estrogen derivative, alone or in combination with a progestin or progestin derivative,

(b) a bisphosphonate,

(c) an antiestrogen or a selective estrogen receptor modulator,

(d) an $\alpha v\beta 3$ integrin receptor antagonist,

(e) a cathepsin K inhibitor,

(f) an HMG-CoA reductase inhibitor,

(g) an osteoclast vacuolar ATPase inhibitor,

(h) an antagonist of VEGF binding to osteoclast receptors,

(i) an activator of peroxisome proliferator-activated receptor γ,

(j) calcitonin,

(k) a calcium receptor antagonist,

(l) parathyroid hormone or analog thereof,

(m) a growth hormone secretagogue,
(n) human growth hormone,
(o) insulin-like growth factor,
(p) a p38 protein kinase inhibitor,
(q) bone morphogenetic protein,
(r) an inhibitor of BMP antagonism,
(s) a prostaglandin derivative,
(t) vitamin D or vitamin D derivative,
(u) vitamin K or vitamin K derivative,
(v) ipriflavone,
(w) fluoride salts,
(x) dietary calcium supplement, and
(y) osteoprotegerin.

27.

28. The method according to Claim 27 wherein:

(a) the estrogen or estrogen derivative, alone or in combination with a progestin or progestin derivative, is selected from conjugated estrogen, equine estrogen, 17β-estradiol, estrone, 17β-ethynyl estradiol, 17β-ethynyl estradiol with at least one agent selected from norethindrone and medroxyprogesterone acetate;
(b) the bisphosphonate is selected from alendronate, clodronate, etidronate, ibandronate, incadronate, minodronate, neridronate, olpadronate, pamidronate, piridronate, risedronate, tiludronate, and zoledronate;
(c) the antiestrogen or selective estrogen receptor modulator is selected from raloxifene, clomiphene, zuclomiphene, enclomiphene, nafoxidene, CI-680, CI-628, CN-55,945-27, Mer-25, U-11,555A, U-100A, tamoxifen, lasofoxifene, toremifene, azorxifene, EM-800, EM-652, TSE 424, droloxifene, idoxifene, and levormeloxifene;
(d) the HMG-CoA reductase inhibitor is selected from lovastatin, simvastatin, dihydroxy-open acid simvastatin, pravastatin, fluvastatin, atorvastatin, cerivastatin, rosuvastatin, pitavastatin, and nisvastatin;
(e) calcitonin is salmon calcitonin administered as a nasal spray;
(f) bone morphogenetic protein is selected from BMP 2, BMP 3, BMP 5, BMP 6, BMP 7, TGF beta, and GDF5;

(g) insulin-like growth factor is selected from IGF I and IGF II alone or in combination with IGF binding protein 3;

(h) the prostaglandin derivative is selected from agonists of prostaglandin receptors EP1, EP2, EP4, FP, and IP;

(i) the fibroblast growth factor is selected from aFGF and bFGF;

(j) parathyroid hormone (PTH) or PTH analog is selected from PTH subcutaneous injection, human PTH (1-84), human PTH (1-34), and other partial sequences, native or with substitutions;

(k) vitamin D or vitamin D derivative is selected from natural vitamin D, 25-OH-vitamin D3, 1α,25(OH)$_2$ vitamin D3, 1α-OH-vitamin D3, 1α-OH-vitamin D2, dihydrotachysterol, 26,27-F6-1α,25(OH)$_2$ vitamin D3, 19-nor-1α,25(OH)$_2$ vitamin D3, 22-oxacalcitriol, calcipotriol, 1α,25(OH)$_2$-16-ene-23-yne-vitamin D3 (Ro 23-7553), EB1089, 20-epi-1α,25(OH)$_2$ vitamin D3, KH1060, ED71, 1α,24(S)-(OH)$_2$ vitamin D3, and 1α,24(R)-(OH)$_2$ vitamin D3;

(l) the dietary calcium supplement is selected from calcium carbonate, calcium citrate, and natural calcium salts; and

(m) the fluoride salts are selected from sodium fluoride and monosodium fluorophosphate (MFP);

and pharmaceutically acceptable salts thereof.

28.

29. The method according to Claim 28, wherein the bisphosphonate is alendronate monosodium trihydrate or alendronate monosodium monohydrate.

29.

30. The method of Claim 20, wherein said agent is selected from:

(a) an estrogen or an estrogen derivative, alone or in combination with a progestin or progestin derivative,

(b) a bisphosphonate,

(c) an antiestrogen or a selective estrogen receptor modulator,

(d) an αvβ3 integrin receptor antagonist,

(e) a cathepsin K inhibitor,

(f) an osteoclast vacuolar ATPase inhibitor,

(g) an antagonist of VEGF binding to osteoclast receptors,

(h) calcitonin,

(i) ostoprotegrin, and

(j) parathyroid hormone or analog thereof.

30.

31. A pharmaceutical composition comprising a therapeutically effective amount of a compound of Claim 1 and a pharmaceutically acceptable carrier.

31

32. The composition of Claim 31 which further comprises an active ingredient selected from:

(a) an estrogen or an estrogen derivative, alone or in combination with a progestin or progestin derivative;
(b) a bisphosphonate;
(c) an antiestrogen or a selective estrogen receptor modulator,
(d) an $\alpha v\beta 3$ integrin receptor antagonist,
(e) a cathepsin K inhibitor,
(f) an HMG-CoA reductase inhibitor,
(g) an osteoclast vacuolar ATPase inhibitor,
(h) an antagonist of VEGF binding to osteoclast receptors,
(i) an activator of peroxisome proliferator-activated receptor γ,
(j) calcitonin,
(k) a calcium receptor antagonist,
(l) parathyroid hormone or analog thereof,
(m) a growth hormone secretagogue,
(n) human growth hormone,
(o) insulin-like growth factor,
(p) a p38 protein kinase inhibitor,
(q) bone morphogenetic protein,
(r) an inhibitor of BMP antagonism,
(s) a prostaglandin derivative,
(t) vitamin D or vitamin D derivative,
(u) vitamin K or vitamin K derivative,
(v) ipriflavone,
(w) fluoride salts,
(x) dietary calcium supplement, and
(y) osteoprotegerin

32.

~~33~~. The composition of Claim 32 wherein said active ingredient is selected from:

(a) an estrogen or an estrogen derivative, alone or in combination with a progestin or progestin derivative,

(b) a bisphosphonate,

(c) an antiestrogen or a selective estrogen receptor modulator,

(d) an $\alpha v\beta 3$ integrin receptor antagonist,

(e) a cathepsin K inhibitor,

(f) an osteoclast vacuolar ATPase inhibitor,

(g) calcitonin,

(h) osteoprotegrin, and

(i) parathyroid hormone or analog thereof.

33.

~~34~~. The composition of Claim 33, wherein said bisphosphonate is alendronate.

34. ~~35~~. A method of increasing bone mineral density in a mammal in need thereof, comprising administering a therapeutically effective amount of a compound according to Claim 1 or a pharmaceutically acceptable salt or an enantiomer thereof.

35.

~~36~~. A method of reducing the risk of vertebral or non-vertebral fractures in a mammal in need thereof, comprising administering a therapeutically effective amount of a compound according to Claim 1 or a pharmaceutically acceptable salt or an enantiomer thereof.

36.

~~37~~. A method of effecting a bone turnover marker in a mammal in need thereof, comprising administering a therapeutically effective amount of a compound according to Claim 1 or a pharmaceutically acceptable salt or an enantiomer thereof.

37.

~~38~~. A pharmaceutical composition made by combining a compound according to Claim 1 and a pharmaceutically acceptable carrier.

38.

~~39~~. A process for making a pharmaceutical composition comprising combining a compound according to Claim 1 and a pharmaceutically acceptable carrier.

39.

40. A method of treating or preventing an arthritic condition in a mammal in need thereof, comprising administering a therapeutically effective amount of a compound according to Claim 1 or a pharmaceutically acceptable salt or an enantiomer thereof.

40.

41. A method of Claim 40, wherein the arthritic condition is selected from rheumatoid arthritis and osteoarthritis.